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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/613,759	07/11/2000	Erez N. Ribak	00/20096	9837

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EXAMINER
GONZALEZ, JULIO C

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 06/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/613,759	RIBAK, EREZ N.	
	Examiner	Art Unit	
	Julio C. Gonzalez	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 May 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 29-31* is/are pending in the application.

4a) Of the above claim(s) *29-31* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 July 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Newly submitted claims 29-31 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Piezoelectrically inducing an element is not the same as inducing a first element. The first element does not have to be induce piezoelectrically. Also, claims 1-3 refer to inducing by applying a voltage to the electrode or the material can be induced by a different external object. Moreover, both, the first and second element are been induced by the applied voltage to the electrode. Also, the piezo device does not have to be induced in order to function/vibrate. For example, surface wave filters using piezo devices do not have to have an induced piezo device. Claims 29-31 disclose piezoelectrically inducing an object, which is not required by the disclosure of claims 1-2. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 29-31 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the isolating channels such as spaces disclosed in claim 2 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-3 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The silicon having piezoelectrical properties is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

The disclosures claims that porous silicon has piezoelectric and properties. However, the disclosures does not specify how is possible for silicon to have piezoelectric properties nor the procedure of any conversion necessary (e.g. physical properties of silicon). Also, the disclosures does not provide any dimension nor a constant of design. How much silicon is needed? How strong an electric field has to be? How much does the silicon expands when a voltage is applied to the electrodes? From the disclosures, the device seems to be inoperative and the disclosure inadequate seems if fails to describe how silicon is able to behave with piezoelectric properties. Also, from claim 1, it would seem like if the device is functioning like a electrostrictive effect. What differentiates claim 1 from a device affecting silicon with an electrostrictive effect?

Due to the lacking essential information in the disclosure, evidence must be presented that silicon has piezoelectric properties.

Moreover, about claim 1, it discloses that the device functions with at least "one electrode", that is, the invention may function with one electrode; however, such device would not be operate since no potential difference could be establish (one electrode) and a piezoelectric device needs at least two electrodes to function properly, otherwise, the electrical charge would be unbalanced with just one electrode.

In order to advance prosecution in the merits, the Prior Art will be applied as best understood by the examiner.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Takeuchi et al (Patent # 6,265,811).

Takeuchi discloses a piezoelectric device having a first porous element 22 connected to a second crystal element 18, an electrode 24a only connected to first element 22 (see figure 5B) such that electric potential of electrode results in strain

induced of first element 22 on second element 18 (column 7, lines 1-4 & column 36, lines 5-9).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi et al (Patent # 6,265,811) in view of Seefeldt et al and White.

Takeuchi discloses a piezoelectric device having a first porous element 22 connected to a second crystal element 18, an electrode 24a only connected to first element 22 (see figure 5B) such that electric potential of electrode results in strain induced of first element 22 on second element 18 (column 7, lines 1-4 & column 36, lines 5-9).

Although it is a matter of design choice to use certain materials, Takeuchi does not disclose that the first element is made up of silicon.

On the other hand, Seefeldt discloses for the purpose of accurately measuring low force changes, a piezoelectric device comprising a first silicon porous material 138, a second element made of crystal 62 attached to first element,

and at least one electrode 114 being in electrical contact with first element (see figure 25), such that subjecting first element to an electric potential results in strain induced (column 4, lines 54-58 and column 5, lines 53, 62, 63 and column 6, lines 3-7).

However, neither Tekeuchi nor Seefeldt disclose explicitly that silicon may be used to induced other elements.

On the other hand, White discloses for the purpose of providing devices that produce minimal electrical interferences that silicon may be used to induced other elements when a voltage is applied to silicon (see abstract & column 2, lines 48-55).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a piezoelectric device as disclosed by Takeuchi et al and to modify the invention by using certain material for the first element for the purpose of accurately measuring low force changes as disclosed by Seefeldt and to use silicon to induced other material for the purpose of providing devices that produce minimal electrical interferences as disclosed by White.

Response to Arguments

5. Applicant's arguments with respect to claims 1-3 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julio C. Gonzalez whose telephone number is (703) 305-1563. The examiner can normally be reached on M-F (8AM-5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

NESTOR RAMIREZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Jcg

May 31, 2002